

A New Species of the Bee Genus *Neocorynura* from the Andes of Ecuador

(Hymenoptera, Halictidae, Augochlorini)

Michael S. Engel

Engel, M. S. (1999): A New Species of the Bee Genus *Neocorynura* from the Andes of Ecuador (Hymenoptera, Halictidae, Augochlorini). – Spixiana **22/2**: 173–178

Neocorynura papallactensis, spec. nov. is described and figured from the Andes of Ecuador. The species was discovered at an elevation of 3200 meters in northern Ecuador. It is distinguished from the other two *Neocorynura* species presently recorded from Ecuador: *N. fuscipes* (Packard) and *N. nigroaenea* (Packard).

Dr. Michael S. Engel, Department of Entomology, Comstock Hall, Cornell University, Ithaca, New York 14853, USA.

Present address: Department of Entomology, American Museum of Natural History, Central Park West at 79th Street, New York, New York 10024, USA.

Introduction

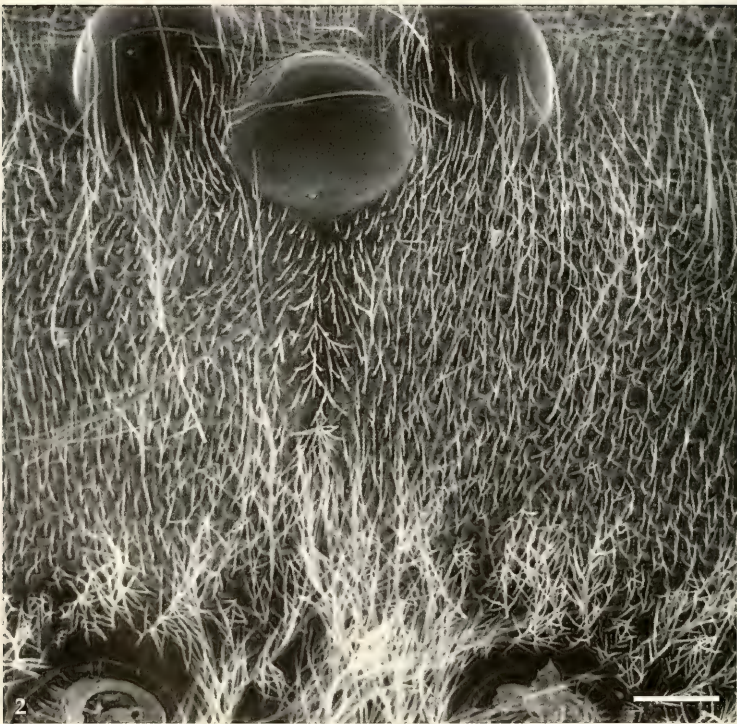
The bee genus *Neocorynura* Schrottky is one of thirty-nine genera and subgenera of the New World tribe Augochlorini (Engel 1998). The group is one of the more widely distributed genera in the tribe with species ranging from northern Argentina to Mexico. One species is presently known from the island of Trinidad but the genus is otherwise not found in the West Indies except for a single specimen found in Oligocene-Miocene Dominican amber (Engel 1995). The genus is difficult to place among the other genera of the tribe owing to an odd mix of plesiomorphic and apomorphic traits. A recent cladistic analysis of the tribe based on the classification of Engel (1998) failed to unambiguously group *Neocorynura* with any other clade of genera (Fig. 6). The future discovery of new character information will hopefully shed light onto the phylogenetic affinities of these bees.

Herein I present the description of a new species of *Neocorynura* found at high altitudes in the Andes of Ecuador. This species was listed as “*Neocorynura* new species 3” in Engel (1998). Two other *Neocorynura* species are presently recorded from Ecuador – *Neocorynura fuscipes* (Packard) and *N. nigroaenea* (Packard) – and are differentiated from the species presented here as new.

Material and Methods

The format for the descriptions follows that used for other augochlorine bee species (e.g. Engel 1997, Engel & Brooks 1998). The abbreviations F, S, and T are used for flagellomere, sternum, and tergum respectively. All measurements were made using an ocular micrometer on a WILD-M5a microscope. Values of total body length were arrived at by summing the individual lengths of the tagmata.

Scanning electron microscopy was carried out at the American Museum of Natural History. Preparation of specimens followed the hexamethyldisalzane procedure outlined by Brown (1993, also discussed in Engel 1998).



Figs 1-2. *Neocorynura papallactensis*, spec. nov., male head. 1. Entire head. Scale bar = 500 μm . 2. Detail of face above level of antennae. Scale bar = 100 μm .

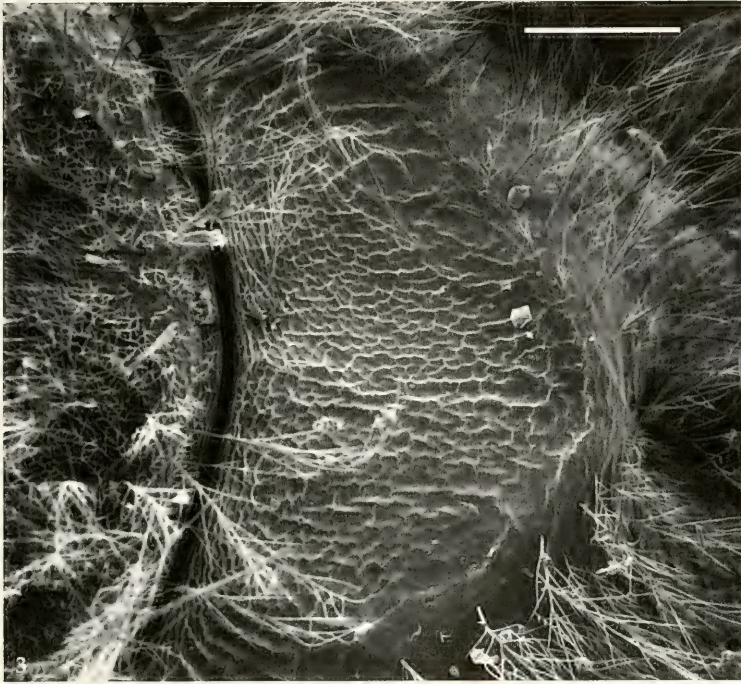


Fig. 3. *Neocorynura papallactensis*, spec. nov., basal area of male propodeum. Scale bar = 200 μ m.

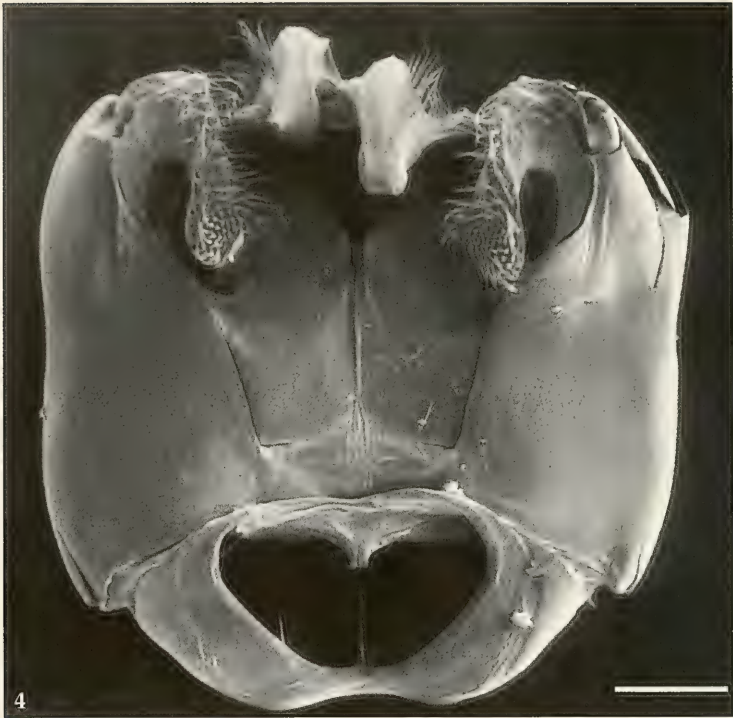
The following abbreviations are used for institutions holding material discussed herein: American Museum of Natural History, New York, New York, J. G. Rozen, Jr. (AMNH); the Natural History Museum, British Museum, London, C. Taylor and G. Else (BMNH); Cornell University Insect Collection, Ithaca, New York, J. K. Liebherr and E. R. Hoebeke (CUIC); Museum of Comparative Zoology, Harvard University, P. Perkins and S. Cover (MCZ); Snow Entomological Collection, Natural History Museum, University of Kansas, Lawrence, Kansas, R. W. Brooks and C. D. Michener (SEMC).

Neocorynura papallactensis, spec. nov.

Figs 1-5

Type material. Holotype: ♂, Ecuador, Napo-Pastaza Province, Papallacta, 10,500 feet elevation [approx. 3,200 meters], 29 January 1958, R. W. Hodges (CUIC). – Allotype: ♀, same data as holotype (CUIC). – Paratypes: 6♂♂, same data as holotype (CUIC); 1♂, same data as holotype (AMNH); 1♂, same data as holotype (BMNH); 1♂, same data as holotype (MCZ); 2♂♂, same data as holotype (SEMC).

Diagnosis. *Neocorynura papallactensis* can be distinguished from most *Neocorynura* species by the striate gena, dense pubescence of the head (Fig. 1), contiguously punctate face (Fig. 2), rugulose propodeum, and metasomal markings in the male. *Neocorynura fuscipes* and *N. nigroaenea*, both from Ecuador, are presently known only on the basis of females but these can be easily differentiated from *N. papallactensis*. In *N. papallactensis* the female face is contiguously punctured (cf. Fig. 2) and mostly black, the pleura are metallic copper-green, the wings are hyaline, the propodeum is metallic copper and rugulose, and the metasoma is entirely dark brown. In *N. nigroaenea* the female face is bluish-green with sparse punctures, the pleura are black, the wings are lightly fuscous, and the bases of the metasomal terga are metallic green. Lastly, in females of *N. fuscipes* the face is metallic green, the basal area of the propodeum is metallic green and granular, the wings are reddish-brown, the second metasomal tergum is metallic green along its base, and the remaining terga are lightly green on their lateral margins.



Figs 4-5. *Neocorynura papallactensis*, spec. nov., male genitalia. 4. Ventral aspect. 5. Dorsal aspect. Scale bar = 200 μm .

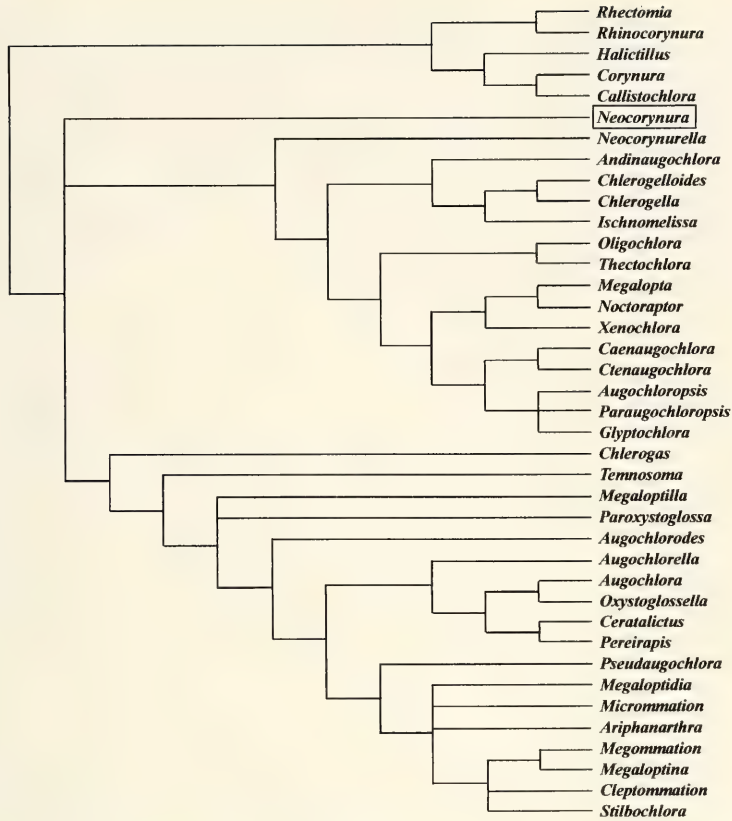


Fig. 6. Phylogeny of the bee tribe Augochlorini with the position of *Neocorynura* indicated (phylogeny from Engel 1998).

Description

♂: Total body length 9.78 mm; forewing length 8.16 mm. Head slightly wider than long (length 2.14 mm, width 2.20 mm). Upper interorbital distance 1.30 mm, lower interorbital distance 1.04 mm. Mandible simple. Anterior border of mesoscutum strongly narrowed and projecting over pronotum. Median line strongly impressed, impression broadens anteriorly to form a minute glabrous patch. Parapsidal lines moderately impressed. Intertegular distance 1.64 mm. Inner hind tibial spur serrate. Basal vein distad cu-a by three times vein width; 1r-m confluent with 1m-cu; 2r-m distad 2m-cu by six times vein width; 2r-m relatively straight. Second submarginal cell slightly narrowed anteriorly; anterior border of second and third submarginal cells approximately equal in length; length of posterior border of third submarginal cell nearly twice length of anterior border. Distal hamuli arranged 3-1-3 on anterior margin of hind wing. Basal area of propodeum approximately equal in length to scutellum; metanotum just less than one-half scutellar length. Metasoma petiolate. Male genitalia depicted in figs 4-5.

Clypeus with widely scattered faint punctures, integument between granular. Supraclypeal area granular. Face below antennae as on clypeus, above antennae contiguously punctured (Fig. 2), becoming roughened by vertex. Gena dorso-ventrally striate, striae becoming weak by postgena which is imbricate. Pronotum dorsally imbricate, laterally imbricate with minute punctures near bend running from propleuron to pronotal lateral ridge. Mesoscutum strongly granular and punctured around parapsidal lines. Scutellum as on mesoscutum. Metanotum minutely roughened. Preepisternum coarsely roughened and with coarse punctures along border with mesepisternum. Mesepisternum and metepisternum granular. Propodeal lateral and posterior surfaces granular; basal area rugulose (Fig. 3). Metasoma faintly imbricate.

Mandible black with reddish apex. Labrum black. Clypeus black at apex, remainder metallic copper-green. Supraclypeal area and face below level of antennae metallic copper-green, remainder of face, vertex, and upper half of gena black with a few widely scattered copper highlights. Scape, pedicel, and F1 black; F2-11 black on upper surface, brown on lower surface. Lower half of gena becoming metallic copper-green and copper on postgena. Pronotum dark brown with strong metallic copper-green highlights on dorsal surface, such highlights weaker but present on lateral surface. Mesoscutum black with a few faint green highlights laterally. Tegula dark brown. Wings hyaline; veins brown. Scutellum as on mesoscutum. Metanotum metallic copper-green. Pleura metallic copper-green. Propodeum metallic copper with a few faint green highlights. Legs dark brown with metallic green highlights except amber and without highlights on tarsi, apices of tibiae, and base of metatibia. T1 brown with metallic green highlights; T2 amber except apical margin brown; T3 dark brown except basal quarter amber; T4-7 dark brown; S1 amber except along basal margin and medially brown; S2 amber; S3-6 brown.

Pubescence generally golden except fuscous on face, upper half of gena, mesoscutum, tegula, and scutellum. Hairs of head and mesosoma particularly thick but not obscuring the integument (Fig. 1). Pubescence over head, mesoscutum, scutellum, metanotum, pleura, and propodeal lateral and posterior surfaces very long (3-4 times diameter of median ocellus) and plumose. Metatibia and metabasitarsus with field of short, stiff, yellow hairs on inner surface. Hairs of metasoma generally short (0.5-1.5 times diameter of median ocellus) and simple. Band of off-white tomentum along base of T2. Hairs of S5-6 medially directed with small patch on central disk lacking pubescence.

♀: As for the male except as indicated. Total body length 9.44 mm; forewing length 7.92 mm. Head wider than long (length 2.08 mm, width 2.24 mm). Upper interorbital distance 1.32 mm, lower interorbital distance 1.28 mm. Mandible with strong subapical tooth. Intertegular distance 1.72 mm. Inner hind tibial spur pectinate, with four long teeth (not including apex of spur as a tooth). Metasoma oval, not petiolate.

Legs dark brown except amber on inner surfaces of tibiae. Metasoma dark brown without amber markings.

Scape without long, plumose hairs. Short, fuscous hairs on outer surfaces of meso- and metatibiae and basitarsi. T2 without band of tomentum at base. Sterna with dense, long, mostly simple, gold hairs.

Derivatio nominis. The specific epithet is derived from the type locality; Papallacta, Ecuador.

Acknowledgements

My thanks is extended to each of the curators mentioned above for loans of material associated with my systematic studies of the Augochlorini and/or hosting me during my stays at their respective institutions. I am grateful to P. Fong-Melville for her expert assistance in the operation of the scanning electron microscope and to J. G. Rozen, Jr., D. Bynum, and the directors of the American Museum of Natural History for their support of my studies. I am further indebted to J. G. Rozen, Jr., for graciously hosting me during my numerous visits to the American Museum and to B. A. Klein for housing me in New York City. I am grateful to J. G. Engel for comments during the preparation of this paper. Support for this study was provided by a National Science Foundation Predoctoral Fellowship and the Kalbfleisch Fund of the American Museum of Natural History.

References

- Brown, B. V. 1993. A further chemical alternative to critical-point-drying for preparing small (or large) flies. – *Fly Times* 11: 10
- Engel, M. S. 1995. *Neocorymura electra*, a new fossil bee species from Dominican amber (Hymenoptera: Halictidae). – *J. New York Entomol. Soc.* 103: 317-323
- – 1997. *Ischnomelissa*, a new genus of augochlorine bees (Halictidae) from Colombia. – *Stud. Neotrop. Fauna Environ.* 32: 41-46
- – 1998. Phylogeny, Classification, and Evolutionary Ethology of the Bee Tribe Augochlorini (Hymenoptera: Halictidae). – Ph.D. Dissertation, Cornell University, Ithaca, New York, xxii+306 pp.
- – & R. W. Brooks 1998. The nocturnal bee genus *Megaloptidia* (Hymenoptera: Halictidae). – *J. Hym. Res.* 7: 1-14